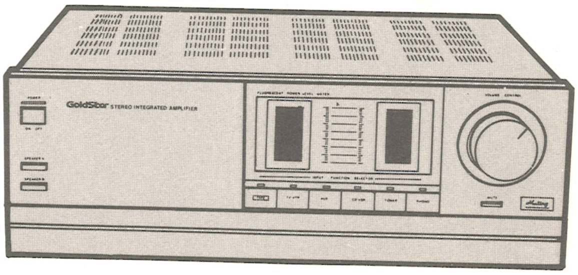
GoldStar

STEREO INTEGRATED AMPLIFIER
SERVICE MANUAL

CAUTION

BEFORE SERVICING THE CHASSIS, READ THE "SAFETY PRECAUTION" IN THIS MANUAL.


GoldStar STEREO INTEGRATED AMPLIFIER

MODEL: GSA-9320

GoldStar

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SAFETY PRECAUTION

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual, electrical components having such features are identified by a ⚠ in the schematic diagram and the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire or other hazards.

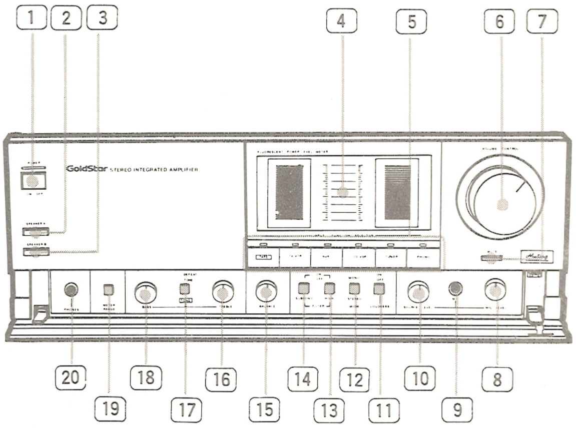
SPECIFICATIONS

1. Output Power (8 Ω Load, 0.3% Distrotion, 63 Hz-12.5 kHz, Both Channel Driven)	110 W + 110 W
2. Distortion (Nominal Output Power, −3 dB, 1 kHz)	0.005%
3. Frequency Response (20 Hz-20 kHz)	±0.8 dB
4. Signal-to-noise Ratio (2.2 kΩ, IHF-A)	Phono: 83 dB
(22 kΩ/250 pF, IHF-A)	Tuner, CD/VDP, Aux, TV/VTR, Tape Mon.: 100 dB
5. Cross Talk (Input Shorted)	250 Hz: 6 dB, 1 kHz: 60 dB, 10 kHz: 45 dB
6. Tone Control	Bass 100 Hz: 10 dB Treble 10 kHz: 10 dB
7. Input Sensitivity (100 W, 1 kHz, 8 Ω)	Phono: 2.5 mV Tuner, CD/VDP, Aux, TV/VTR, Tape Mon: 150 mV Mic: 1.5 mV
8. Input Impedance (Volume Max., −6 dB position)	Phono, Tape, Aux: 47 kΩ
9. Loudness (Volume Max., −30 dB position)	100 Hz: +6 dB, 10 kHz: +3 dB
10. Power Requirement	AC 220 V, 50 Hz
11. Power Consumption	630 W
12. Dimension (Width × Height × Depth)	430 × 145 × 360 (mm)
13. Weight	12 Kg

NOTE: Specifications for this model are subject to change without prior notice.

NAMES OF CONTROL PARTS

1. POWER Switch
2. SPEAKER A Button
3. SPEAKER B Button
4. POWER LEVEL METER
5. INPUT FUNCTION SELECTOR
6. VOLUME CONTROL
7. MUTE Button
8. MIC LEVEL Control
9. MIC Jack
10. SOURCE LEVEL Control
11. LOUDNESS Button
12. MODE Button
13. HIGH FILTER Button
14. SUBSONIC FILTER Button
15. BALANCE Control
16. TREBLE Control
17. TONE Button
18. BASS Control
19. METER RANGE Button
20. PHONES Jack
21. Jacks
22. GND Pin
23. SPEAKER Terminals
24. AC OUTLET
25. Power Cord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GoldStar STEREO INTEGRATED AMPLIFIER
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Figure 1 FRONT VIEW

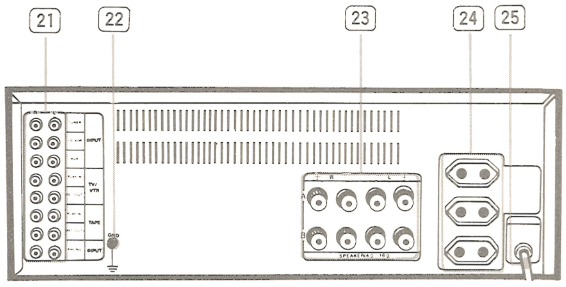
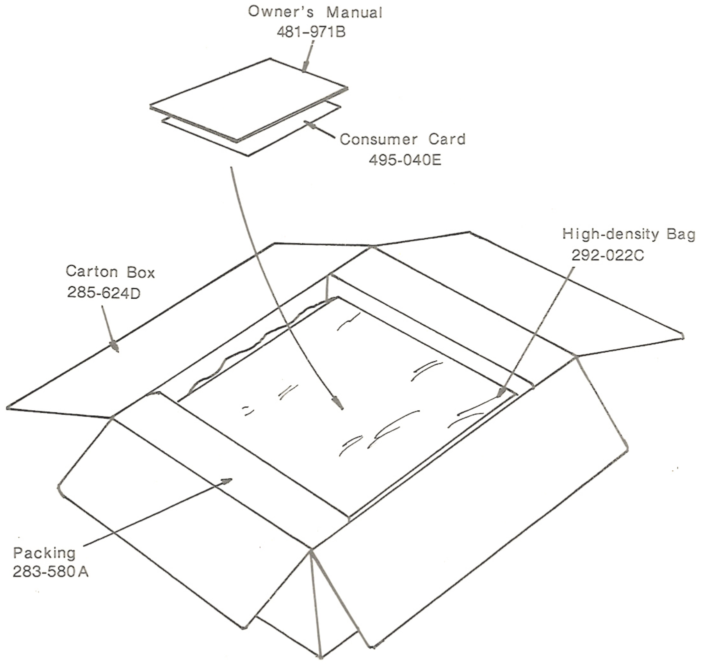

21
22
23
24
25
INPUT
TV/VTR
TAPE
INPUT
GND
A
B

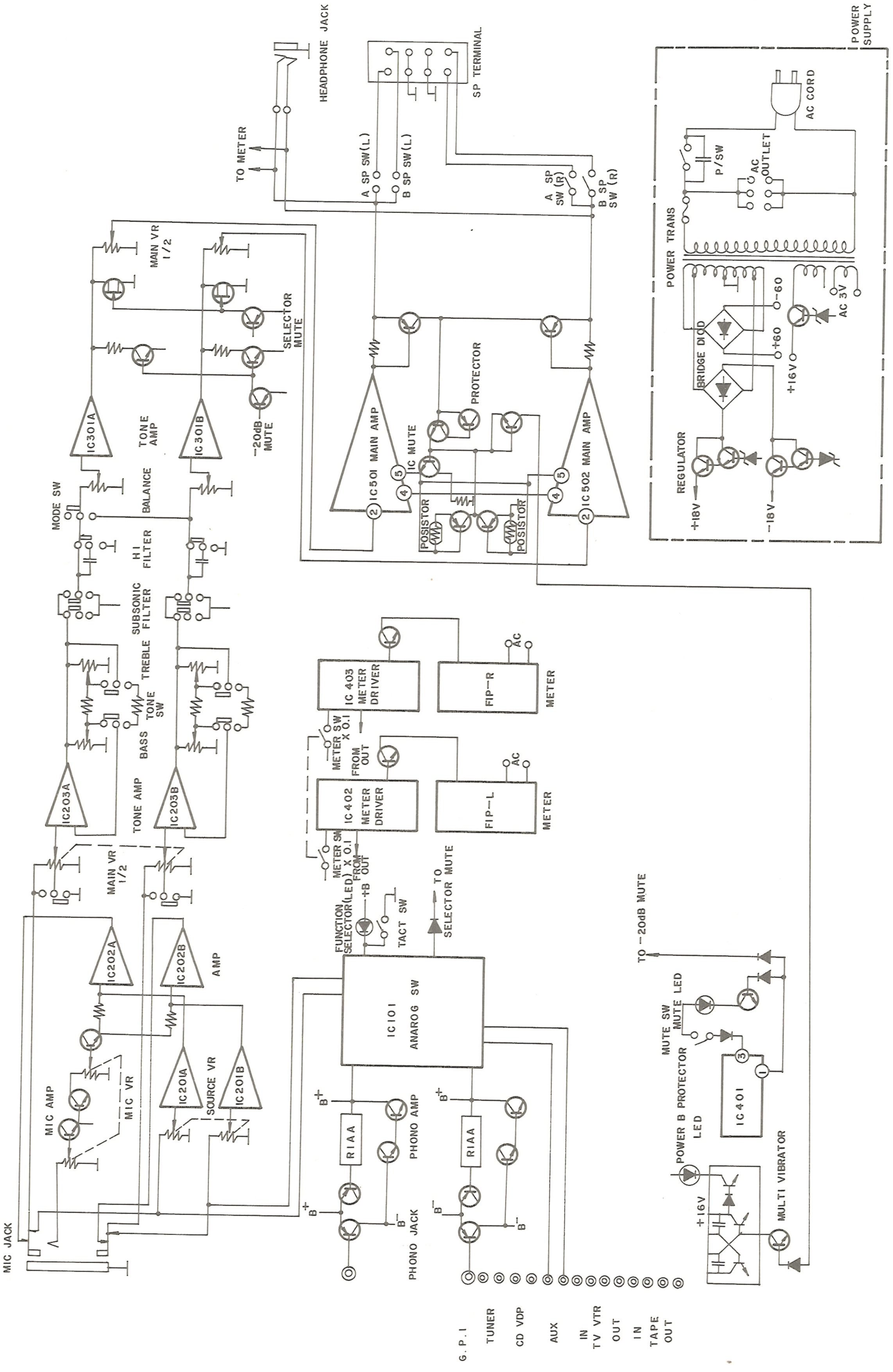
Figure 2 BACK VIEW

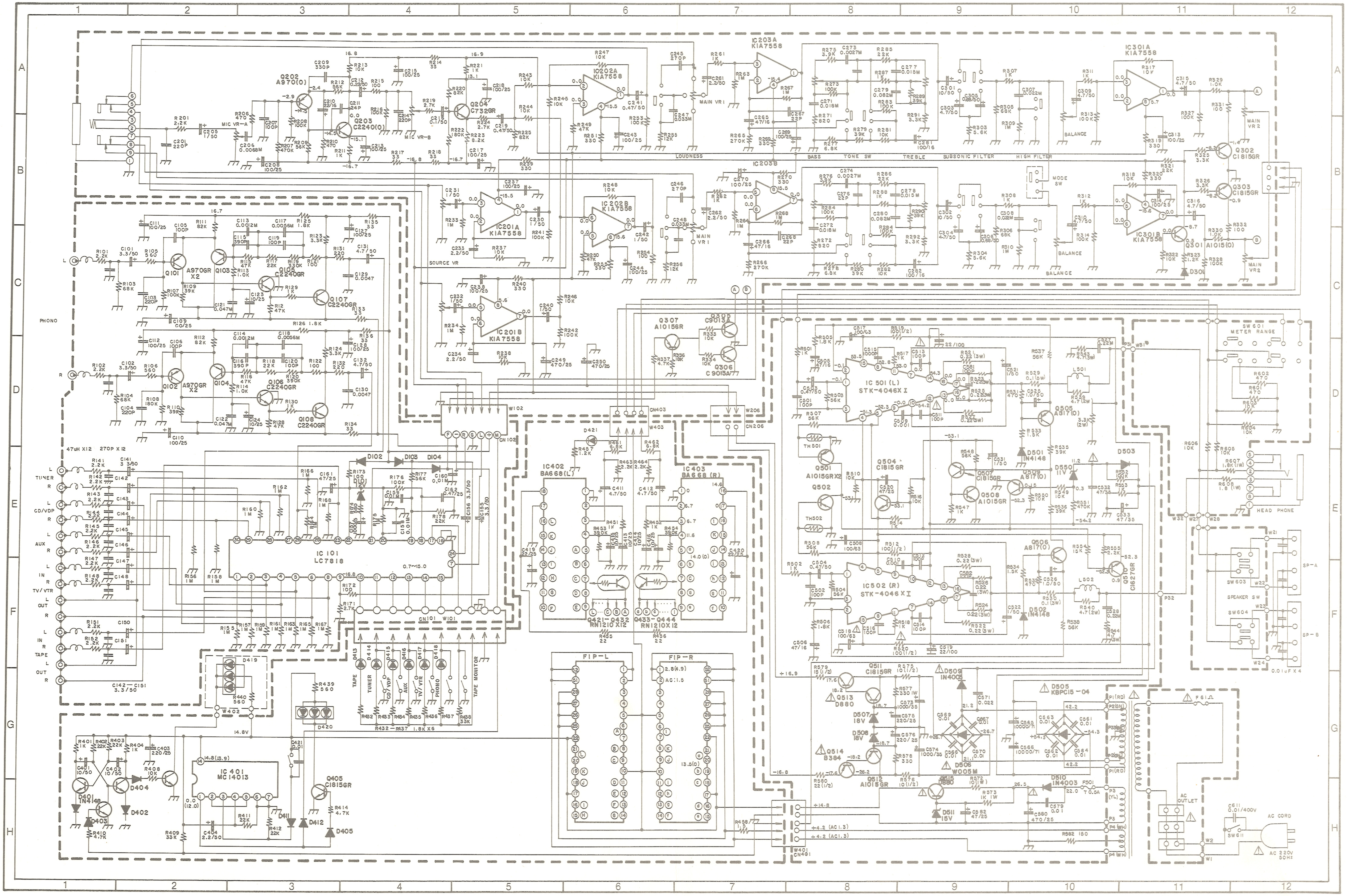
NOTE: For a complete description of the operation of this unit, please refer to the owner's manual.

PACKING OF THE SET


Owner's Manual
481-971B
Consumer Card
495-040E
High-density Bag
292-022C
Carton Box
285-624D
Packing
283-580A

BLOCK DIAGRAM


HEADPHONE JACK
SP TERMINAL
POWER SUPPLY
AC CORD
P/SW
AC OUTLET
POWER TRANS
-60
+60
AC 3V
BRIDGE DIOD
+16V
REGULATOR
+18V
-18V
TO METER
A SP SW(L)
B SP SW(L)
A SP SW(R)
B SP SW(R)
MAIN VR 1/2
SELECTOR MUTE
-20dB MUTE
TONE AMP
IC301A
IC301B
PROTECTOR
IC MUTE
IC501 MAIN AMP
IC502 MAIN AMP
POSISTOR
MODE SW
BALANCE
HI FILTER
SUBSONIC FILTER
TREBLE
TONE SW
BASS
IC203A
IC203B
TONE AMP
MAIN VR 1/2
IC403 METER DRIVER
FIP-R
METER
AC
METER SW X 0.1
FROM OUT
IC402 METER DRIVER
FIP-L
METER
AC
METER SW X 0.1
FROM OUT
FUNCTION SELECTOR(LED)
+B
TACT SW
TO SELECTOR MUTE
TO -20dB MUTE
IC202A
IC202B
AMP
MIC AMP
MIC VR
IC201A
IC201B
SOURCE VR
IC101 ANAROG SW
MUTE SW
MUTE LED
IC401
POWER B PROTECTOR LED
MULTI VIBRATOR
+16V
B+
RIAA
PHONO AMP
B-
B+
RIAA
B-
MIC JACK
PHONO JACK
G.P.I
TUNER
CD VDP
AUX
IN
TV VTR
OUT
IN
TAPE
OUT


1
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3
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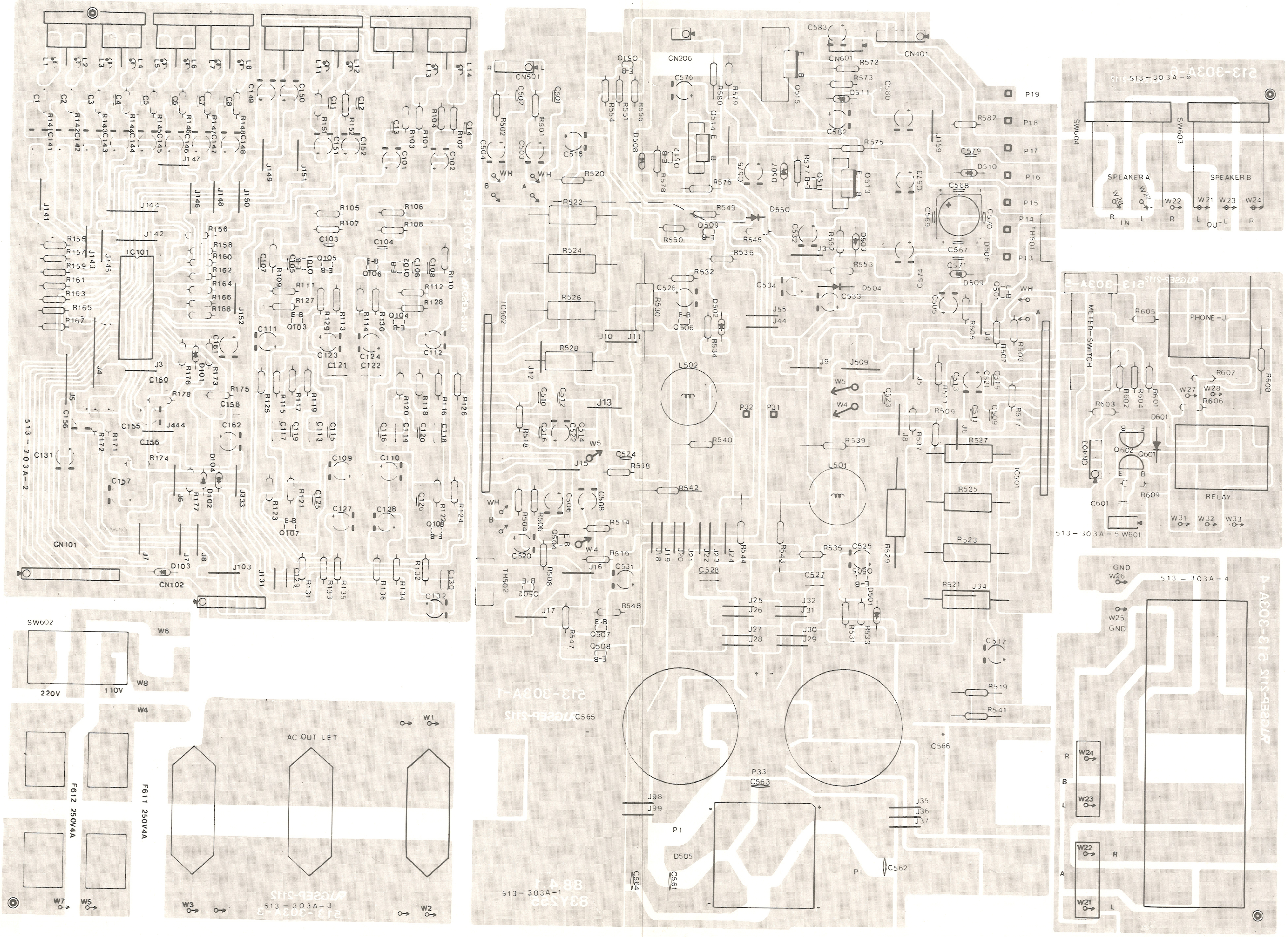
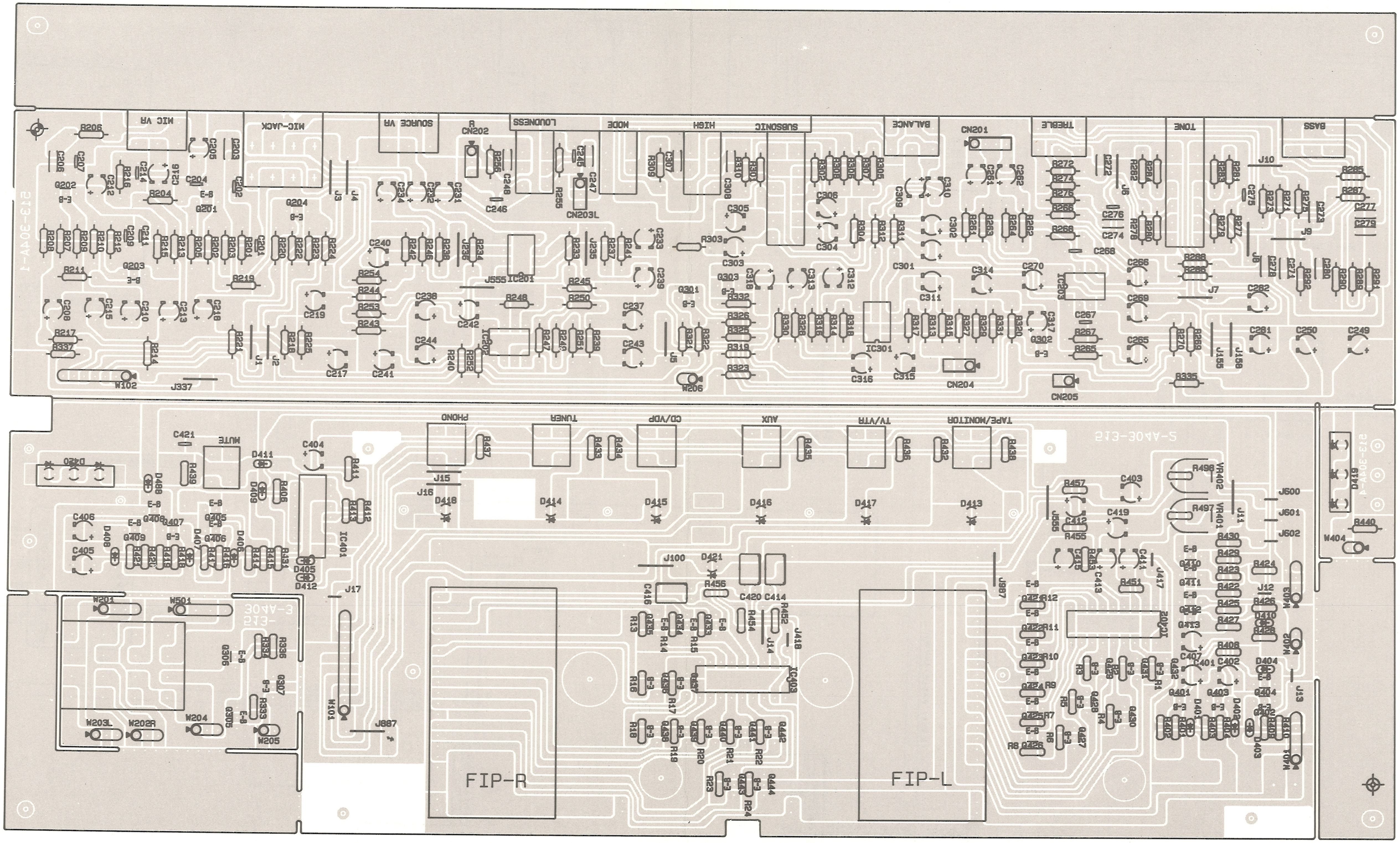
7
8
9
10
11
12
A
B
C
D
E
F
G
H
Q202 A970(O)
Q203 C2240(O)
Q204 C732GR
IC202A KIA7558
IC203A KIA7558
IC301A KIA7558
IC201A KIA7558
IC202B KIA7558
IC203B
IC201B KIA7558
IC301B KIA7558
Q302 C1815GR
Q303 C1815GR
Q301 A1015(O)
D301
MIC VR-A
MIC VR-B
LOUDNESS
BASS
TONE SW
TREBLE
SUBSONIC FILTER
HIGH FILTER
MODE SW
MAIN VR 1
MAIN VR 2
BALANCE
SOURCE VR
PHONO
Q101 A970GR X2
Q102 A970GR X2
Q103
Q104
Q105 C2240GR
Q106 C2240GR
Q107 C2240GR
Q108 C2240GR
Q307 A1015GR
Q305 C9013
Q306 C9013/77
W102
CN102
CN403
W403
W206
CN206
47uH X12 270P X12
TUNER
CD/VDP
AUX
IN
TV/VTR
OUT
TAPE
IC101 LC7818
D102
D103
D104
D101
CN101 W101
IC402 BA668(L)
IC403 BA668(R)
D421
Q421–Q432 RN1210 X12
Q433–Q444 RN1210 X12
D419
W402
D420
D413
D414
D415
D416
D417
D418
TAPE
TUNER
CD/VDP
AUX
TV/VTR
PHONO
TAPE MONITOR
R432–R437 1.8K X6
IC401 MC14013
Q405 C1815GR
D401 1N4148
D402
D403
D404
D405
D411
D412
FIP-L
FIP-R
W401 CN401
IC501 (L) STK-4046XI
IC502 (R) STK-4046XI
Q501 A1015GRX2
Q502
Q504 C1815GR
Q505 A817(O)
Q506 A817(O)
Q507 C1815GR
Q508 A1015GR
Q509
Q510 C1627GR
TH501
TH502
D501 1N4148
D502 1N4148
D503
D550 11V
L501
L502
METER RANGE
SW601
SW603
SW604
SPEAKER SW
SP-A
SP-B
HEAD PHONE
0.01uF X4
Q511 C1815GR
Q512 A1015GR
Q513 D880
Q514 B384
Q515 D880
D505 KBPC15-04
D506 W005M
D507 18V
D508 18V
D509 1N4003
D510 1N4003
D511 15V
F501 T 0.5A
F611
AC OUTLET
SW611
AC CORD
AC 220V 50Hz

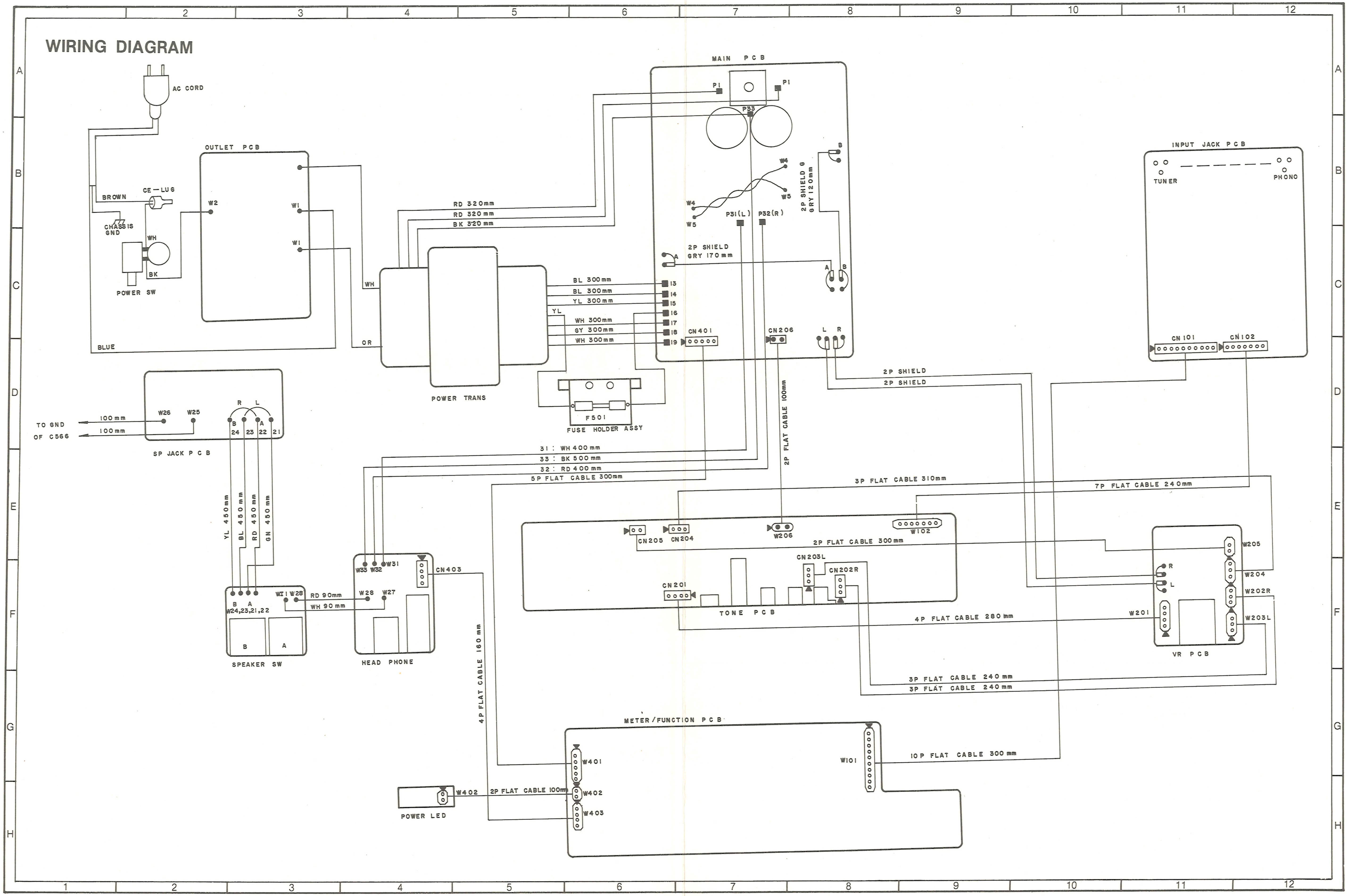
• MAIN P.C. BOARD


513-303A-2
513-303A-1
513-303A-3
513-303A-4
513-303A-5
513-303A-6
RJGSEP-2112
IC101
IC501
IC502
CN101
CN102
CN206
CN401
CN501
CN601
CN402
L501
L502
TH501
TH502
SW602
SW603
SW604
220V
110V
AC OUT LET
F611 250V4A
F612 250V4A
SPEAKER A
SPEAKER B
IN
OUT
METER-SWITCH
PHONE-J
RELAY
GND
P13
P14
P15
P16
P17
P18
P19
P31
P32
P33
D505
C561
C562
C563
C564
C565
C566
W1
W2
W3
W4
W5
W6
W7
W8
W21
W22
W23
W24
W25
W26
W27
W28
W31
W32
W33
W601
R
L
B
A
WH
884 1
83Y25

• CONTROL & DISPLAY P.C. BOARD


MIC VR
MIC-JACK
SOURCE VR
LOUDNESS
MODE
HIGH
SUBSONIC
BALANCE
TREBLE
TONE
BASS
CN201
CN202
CN203L
CN204
CN205
IC201
IC202
IC203
IC301
IC401
IC402
IC403
W102
W206
J337
PHONO
TUNER
CD/VDP
AUX
TV/VTR
TAPE/MONITOR
MUTE
VR401
VR402
W201
W501
W203L
W202R
W204
W205
W101
W401
W402
W403
W404
J100
J887
J987
FIP-R
FIP-L
213-304V-1
213-304V-2
213-304V-3

WIRING DIAGRAM


AC CORD
BROWN
CE — LUG
CHASSIS GND
WH
BK
POWER SW
BLUE
OUTLET P C B
W2
W1
W1
WH
OR
RD 320mm
RD 320mm
BK 320mm
POWER TRANS
YL
BL 300mm
BL 300mm
YL 300mm
WH 300mm
GY 300mm
WH 300mm
F501
FUSE HOLDER ASSY
MAIN P C B
P1
P1
P33
B
W4
W5
W4
W5
2P SHIELD G
GRY 120mm
P31(L)
P32(R)
2P SHIELD
GRY 170mm
A
A
B
13
14
15
16
17
18
19
CN401
CN206
L
R
INPUT JACK P C B
TUNER
PHONO
CN101
CN102
2P SHIELD
2P SHIELD
2P FLAT CABLE 100mm
TO GND
OF C566
100mm
100mm
W26
W25
R
L
B
A
24
23
22
21
SP JACK P C B
31 : WH 400mm
33 : BK 500mm
32 : RD 400mm
5P FLAT CABLE 300mm
3P FLAT CABLE 310mm
7P FLAT CABLE 240mm
YL 450mm
BL 450mm
RD 450mm
GN 450mm
CN205
CN204
W206
W102
2P FLAT CABLE 300mm
CN203L
CN202R
CN201
TONE P C B
W205
W204
W202R
W203L
R
L
W201
VR P C B
4P FLAT CABLE 280mm
3P FLAT CABLE 240mm
3P FLAT CABLE 240mm
B
A
W24,23,21,22
W21
W28
RD 90mm
WH 90mm
B
A
SPEAKER SW
W33
W32
W31
W28
W27
CN403
HEAD PHONE
4P FLAT CABLE 160mm
METER/FUNCTION P C B
W401
W402
W403
W101
10P FLAT CABLE 300mm
POWER LED
W402
2P FLAT CABLE 100mm
1
2
3
4
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A
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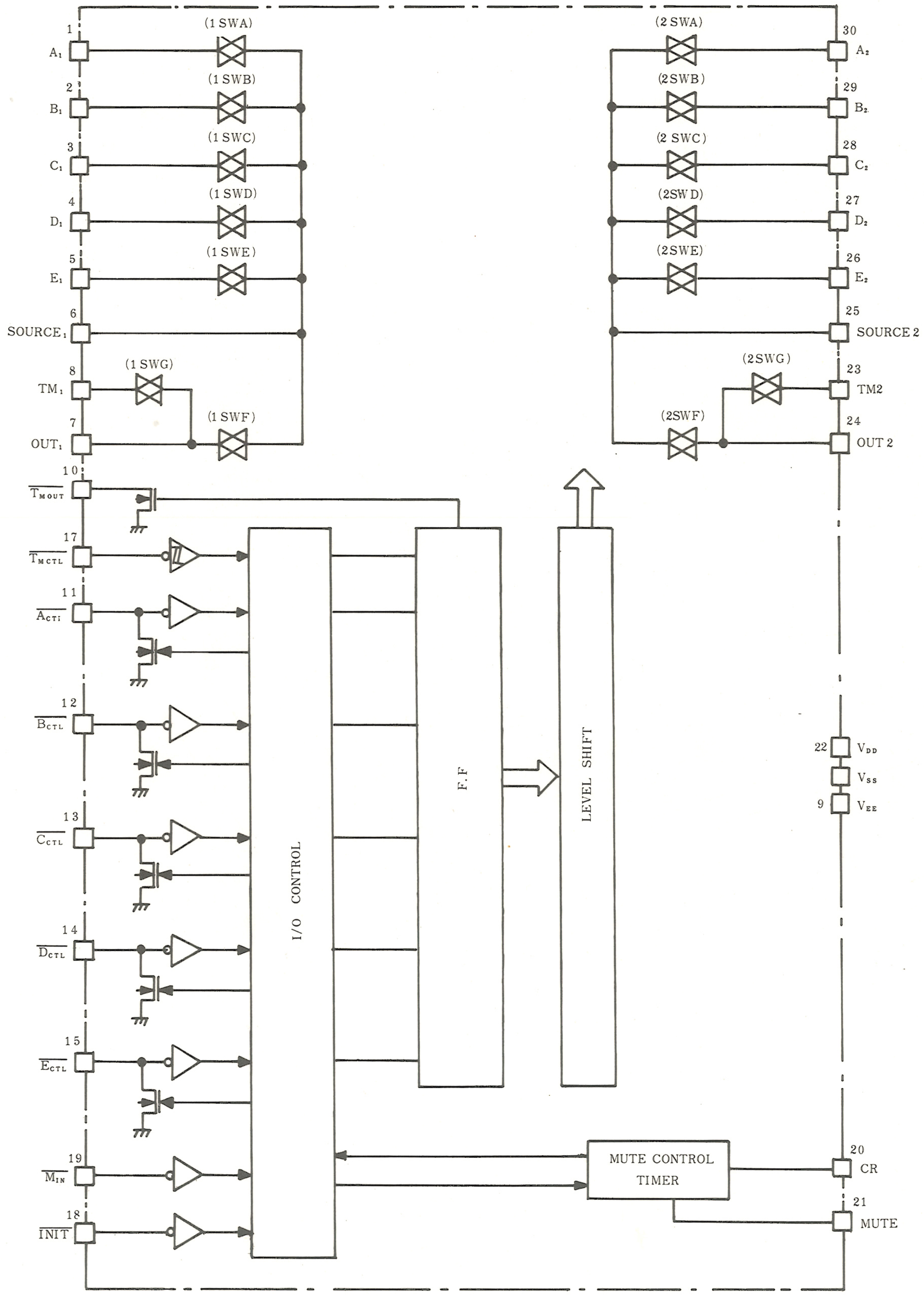
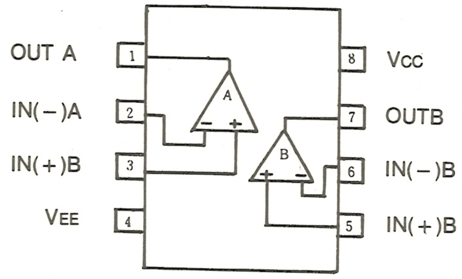
IC EQUIVALENT CIRCUITS

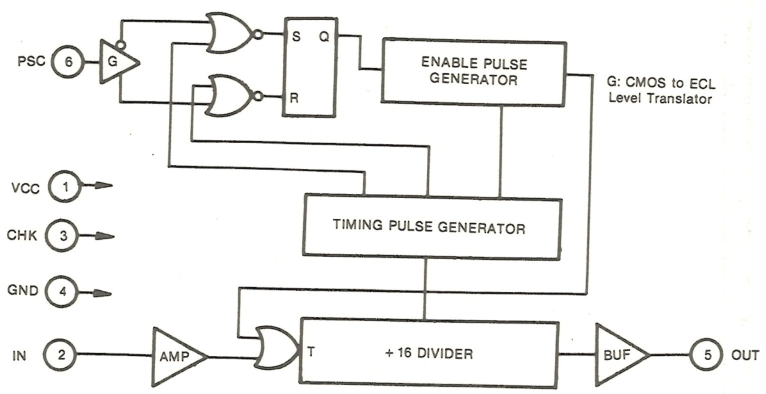
IC101 LC7818


(1 SWA)
(1 SWB)
(1 SWC)
(1 SWD)
(1 SWE)
(1 SWG)
(1 SWF)
(2 SWA)
(2SWB)
(2 SWC)
(2SWD)
(2SWE)
(2SWG)
(2SWF)
1 A₁
2 B₁
3 C₁
4 D₁
5 E₁
6 SOURCE₁
8 TM₁
7 OUT₁
10 T̅M̅O̅U̅T̅
17 T̅M̅C̅T̅L̅
11 A̅C̅T̅L̅
12 B̅C̅T̅L̅
13 C̅C̅T̅L̅
14 D̅C̅T̅L̅
15 E̅C̅T̅L̅
19 M̅I̅N̅
18 I̅N̅I̅T̅
30 A₂
29 B₂
28 C₂
27 D₂
26 E₂
25 SOURCE 2
23 TM2
24 OUT 2
22 VDD
VSS
9 VEE
20 CR
21 MUTE
I/O CONTROL
F.F
LEVEL SHIFT
MUTE CONTROL TIMER

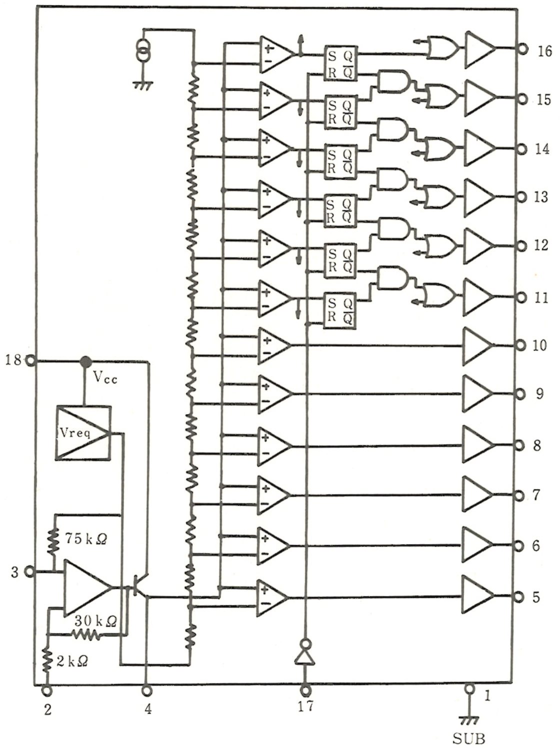
IC201～203, 301 KIA75558P (DUAL OP AMP)


OUT A 1
IN(−)A 2
IN(+)B 3
VEE 4
8 Vcc
7 OUTB
6 IN(−)B
5 IN(+)B
A
B

IC401 MC14013 BCP (D FLIP FLOP)


PSC 6
G
S Q
R
ENABLE PULSE GENERATOR
G: CMOS to ECL Level Translator
VCC 1
CHK 3
GND 4
TIMING PULSE GENERATOR
IN 2
AMP
T
÷16 DIVIDER
BUF
5 OUT

IC402, 403 BA668A (DIGITRON DRIVE)


18
Vcc
Vreg
3
75kΩ
30kΩ
2kΩ
2
4
17
1
SUB
S Q
R Q̅
16
15
14
13
12
11
10
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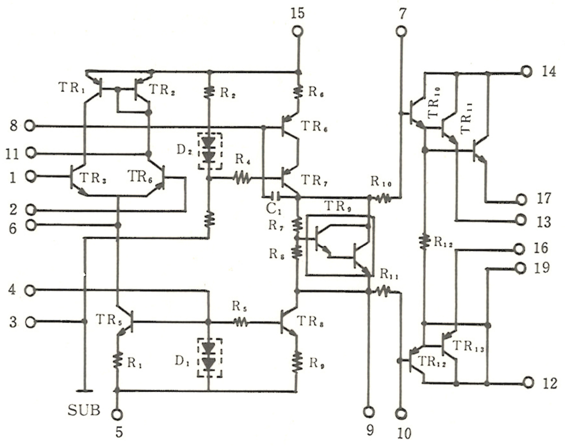
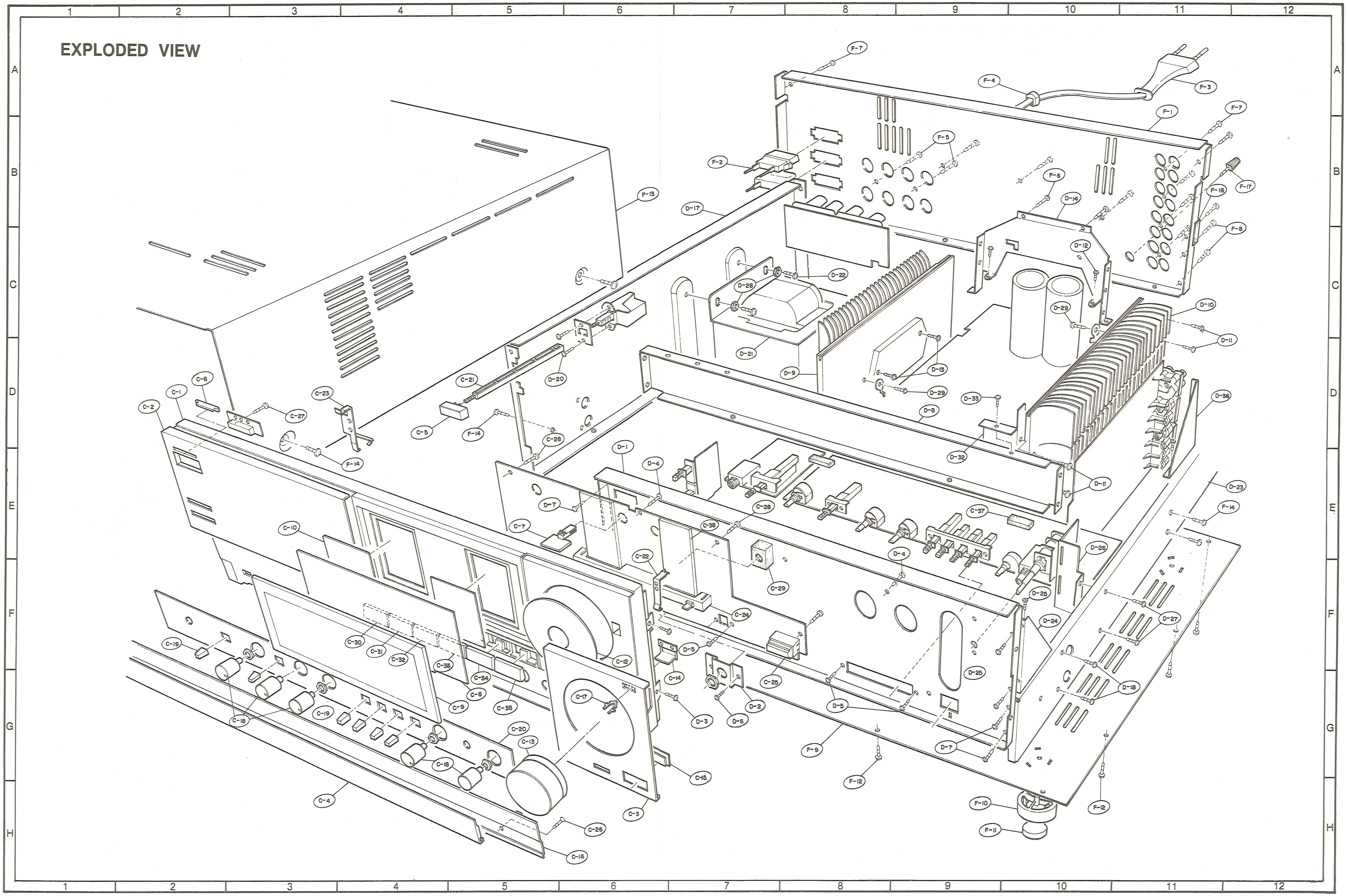
6
5

IC501, 502 STK4046XI


15
7
14
TR₁
TR₂
R₂
R₄
TR₆
8
11
1
2
6
4
3
TR₃
TR₄
D₂
R₆
TR₇
C₁
R₁₀
R₇
TR₉
R₈
R₁₁
R₁₂
TR₁₀
TR₁₁
17
13
16
19
TR₅
R₁
D₁
R₅
TR₈
R₉
TR₁₂
TR₁₃
12
SUB
5
9
10

EXPLODED VIEW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F-5
F-2
F-13
D-17
F-6
D-14
F-16
F-17
F-8
D-12
D-22
D-28
D-10
D-29
D-11
D-21
D-9
D-13
D-29
D-33
D-36
C-6
C-1
C-2
C-23
C-27
C-21
D-20
C-5
F-14
C-28
D-8
D-32
F-14
D-11
D-1
D-4
D-23
D-7
C-28
C-37
F-14
C-10
C-7
C-38
C-22
D-4
D-26
C-29
D-25
D-27
C-24
D-24
C-19
C-30
C-31
C-32
C-33
C-34
C-12
D-5
C-14
C-25
D-25
D-18
C-8
C-9
C-35
C-17
D-3
D-6
D-2
D-5
C-18
C-19
F-9
D-7
C-20
C-13
C-18
C-15
F-12
F-10
F-12
C-4
C-3
C-26
F-11
C-16

REPLACEMENT PARTS LIST

NOTE: Parts marked with "⚠" are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

INTEGRATED CIRCUITS

REF. NO.	PART NO.	DESCRIPTION
IC101	668-661C	LC7818
IC201-203	668-051F	KIA7558P, Dual Op Amp.
IC301	668-051F	KIA75558P, Dual Op Amp.
IC401	668-057A	MC14013BCP, D Flip Flop
IC402,403	668-088B	BA668A, Digitron Drive
IC501,502 ⚠	668-636A	STK4046-XI, H-Power

TRANSISTORS

REF. NO.	PART NO.	DESCRIPTION
Q101-104	665-818A	KTA970-GR, PNP
Q105-108	665-817A	KTC2240-GR, NPN
Q202	665-818A	KTA970-GR, PNP
Q203	665-817A	KTC2240-GR, NPN
Q204	665-816A	KTC732TM-GR, NPN
Q301	665T813B	KTA1015-Y, PNP
Q302,303	665T812B	KTC1815-Y, NPN
Q305,306	665-703B	KTC9013A-H, NPN
Q307	665T813B	KTA1015-Y, PNP
Q401-405	665T812B	KTC1815-Y, NPN
Q421-444	665-716D	RN1210
Q501,502	665T813B	KTA1015-Y, PNP
Q504	665T812B	KTC1815-Y, NPN
Q505,506	665-833B	KTA817A-Y, PNP
Q508	665T813B	KTA1015-Y, PNP
Q509	665-833B	KTA817A-Y, PNP
Q510	665-832B	KTC1627A-Y, NPN
Q511	665T812B	KTC1815-Y, NPN
Q512	665T813B	KTA1015-Y, PNP
Q513 ⚠	664-601A	KTD880-O, NPN
Q514 ⚠	664-602A	KTB834-O, NPN
Q515 ⚠	664-601A	KTD880-O, NPN
Q807	665T812B	KTC1815-Y, NPN

DIODES

REF. NO.	PART NO.	DESCRIPTION
D101	654-724B	Zener, DZ12B
D102-104	651T003A	Switch, DS4148
D401-405	651T031A	Switch, 1SS132
D411,412	651T031A	Switch, 1SS132
D413	653-645A	LED, SLB15VW3, Red
D414-418	653-645B	LED, SLB15MW3, Green
D419	653-647A	LED, LD701VR, Red
D420	653-647B	LED, SLF-406B, Yellow
D421	653-636D	LED, SLR54GC3, Green
D501-503	651T003A	Switch, DS4148
D505 ⚠	652-602D	Rectifier, KBPC15-04
D506 ⚠	652-013A	Rectifier, W005H
D507,508	654-725A	Zener, DZW18
D509,510 ⚠	652-005E	Rectifier, DS4003
D511	654-724D	Zener, DZ15B
D550	654-724A	Zener, DZ11B

COILS

REF. NO.	PART NO.	DESCRIPTION
L501	636-603C	Inductor Fixed, 3μH
L502	636-603C	Inductor Fixed, 3μH

VARIABLE RESISTORS

REF. NO.	PART NO.	DESCRIPTION
	611-650C	Main, 100 × 4
	611-631E	Bass, 100KC
	611-631E	Treble, 100KC
	611-650D	Balance, 100KMN
	611-650G	Source, 250KB
	611-650F	Mic, 100KB

SWITCHES

REF. NO.	PART NO.	DESCRIPTION
SW601	554-624T	Meter, SPUN 12
SW603,604	554-620F	Speaker, SDS3P
SW611 ⚠	554-620G	Power, SCZ1P-A
	554-624T	Tone, SPUN12
	558-908A	Function, KH10902
	558-908A	Mute, KH10902
	554-624S	Push, SPUN44

MISCELLANEOUS

REF. NO.	PART NO.	DESCRIPTION
F611 ⚠	585-517A	Fuse, 250V 4A
F612 ⚠	585-517A	Fuse, 250V 4A
⚠	585-505A	Fuse, 250V 500mV
	572-134A	Jack, Headphone
	576-002E	Jack, Block
	655-005A	Posistor, PTH487A01B222TS
	659-016F	Digitron, FIP26AW22YS

PCB ASSEMBLIES

REF. NO.	PART NO.	DESCRIPTION
	511-303B	PCB Assembly, Main
	511-304B	PCB Assembly, Control and Display

CABINET PARTS

REF. NO.	PART NO.	DESCRIPTION
C-1	258-016A	Panel, Front
C-2	246-072C	Decoration (A), Panel
C-3	246-073A	Decoration (B), Panel
C-4	246-074A	Decoration (C), Door
C-5	273-058A	Knob, Power
C-6	236-059A	Window, Power LED
C-7	273-061A	Knob, Speaker Switch
C-8	256-031C	Plate, Level Meter
C-9	236-058A	Window, Level Meter
C-10	231-560N	Sheet, Display

REF. NO.	PART NO.	DESCRIPTION
C-12	256-032C	Plate, Volume Knob
C-13	273-056A	Knob, Volume
C-14	273-062A	Knob, Mute Switch
C-15	236-057A	Window, Mute LED
C-16	226-002A	Door, Control Switch
C-17	324-016A	Holder, Door
C-18	273-098A	Knob, Control Switch
C-19	273-060A	Knob, Push
C-20	256-034A	Plate Control Switch
C-21	324-019A	Holder, Bar
C-22	442-008A	Spring Earth (A)
C-23	442-020A	Spring Earth (B)
C-24	324-015A	Holder, Function LED
C-25	324-018A	Holder, Mute LED
C-26	TCQ1830I	Screw
C-27	353-025E	Screw, Special 3×6
C-28	353-025G	Screw, Special 3×10
C-29	447-012A	Cushion, Digitron
C-30	273-059S	Knob, Function (Tape)
C-31	273-059B	Knob, Function (TV/VTR)
C-32	273-059C	Knob, Function (Aux)
C-33	273-059D	Knob, Function (CD/VDP)
C-34	273-059E	Knob, Function (Tuner)
C-35	273-059F	Knob, Function (Phono)
C-37	447-010G	Cushion
C-38	256-543A	Plate, Display
D-1	313-093A	Chassis, Front
D-2	321-004A	Bracket, Phone
D-3	TRQ1836J	Screw, TRQ2+3×8A
D-4	353-025G	Screw, Special 3×10
D-5	MPC1830J	Screw, MPC+3×6
D-6	TRQ1836J	Screw, TRQ2+3×8A
D-7	TRQ1836J	Screw, TRQ2+3×8A
D-8	315-006A	Frame, Main
D-9	255-093A	Heatsink (Left)
D-10	255-094A	Heatsink (Right)

REF. NO.	PART NO.	DESCRIPTION
D-11	TRQ1839J	Screw, TRQ2+3×10A
D-12	TRQ1836J	Screw, TRQ2+3×8A
D-13	TRQ1846J	Screw, TRQ2+3×20A
D-14	321-002A	Bracket, Heatsink
D-17	315-007A	Frame (L)
D-18	TRQ1836J	Screw, TRQ2+3×8A
D-20	MPC1830J	Screw, MPC+3×6
D-21 ⚠	641-745C	Trans, Power 220V
D-22	TRQ2236J	Screw, Tapping TRQ2+4×8A
D-23	315-008A	Frame (R)
D-24	321-889A	Bracket (A), Frame
D-25	TRQ1836J	Screw, TRQ2+3×8A
D-26	321-003A	Bracket, Jack PCB
D-27	TRQ1836J	Screw, TRQ2+3×8A
D-28	WSB2200O	Washer, Spring
D-29	TRQ1836J	Screw, TRQ2+3×8A
D-30	321-889B	Bracket (B), Frame
D-31	321-115A	Bracket, Heatsink (L)
D-33	TRQ1836J	Screw, TRQ2+3×8A
F-1	258-020D	Panel, Back
F-2 ⚠	565-004B	AC Outlet
F-3 ⚠	681-015A	Cord, Power
F-4	324-348E	Holder Cord
F-5	353-025B	Screw, Special 3×8
F-6	TRQ1836I	Screw, TRQ2+3×8A
F-7	353-025B	Screw, Special 3×8
F-8	TRQ1836I	Screw, TRQ2+3×8A
F-9	256-030A	Plate, Bottom
F-10	265-001A	Foot
F-11	256-033A	Plate Rubber
F-12	TRQ1830J	Screw, TRQ2+3×6A
F-13	213-004A	Cabinet
F-14	353-633A	Screw, Special
F-16	447-010H	Cushion
F-17	353-055A	Screw, Special